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EXAMINER

BUTLER, PATRICK NEAL

ART UNIT

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1791

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/539,152	Applicant(s) MUTH ET AL.	
	Examiner Patrick Butler	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 41,43,44,46-48 and 53-79 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 41,43,44,46-48 and 53-79 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>20100406</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The limitation "insulation material enters the tunnel furnace having a rectangular cross-sectional profile" in lines 9 and 10 of Claim 41 is not found in the Specification as originally filed. Incorporation of the matter's support (original Claim 2) into the Specification is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 67, 68, and 77 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 67 recites the limitation "molding element" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim. For purposes of examination, the Examiner interprets "molding element" and "molding device" to be restatements of the same component. Claim 68 is rejected via its dependency.

With respect to Claim 77, the claim's alternative of "and/or" allows for the claim to require that the "first and second molding element consists of a single member." However, this does not clearly define what is excluded, such as two components, or what a "single member" would be limited to if could be made of more than one molding

Art Unit: 1791

element and still be only a "single member." For purposes of examination, the Examiner interprets the claim without the "and" alternative: the first or second molding element consists of a single member.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 41, 44, 46-48, 53-64, 67-70, and 72-74 are rejected under 35 U.S.C.

103(a) as being unpatentable over Morrison et al. (US Patent No. 2,997,096) in view of Gilhart (US Patent No. 3,045,316).

With respect to Claim 41, Morrison teaches making a glass wool pack with an uncured binding agent (a method of producing insulation elements made of mineral wool containing a curable binder) by delivering a fibrous glass web 16 and an uncured binding agent onto a conveyor 18 (depositing insulation material comprising mineral wool and a curable binder on a conveyor) into and through a curing oven 30 (curing and transporting the insulation material through a tunnel furnace) where it is brought down to its desired thickness from four inches to two inches by the compression conveyor 32 and is in contact with the mass of fibers 16 during curing (subjecting sections of the insulation material to controlled compaction in such a manner that at least one permanent impression and/or deformation is produced in the insulation blanket while the insulation blanket is curing during its passage through the tunnel furnace; wherein the

Art Unit: 1791

insulation material enters the tunnel furnace having a rectangular cross-sectional profile and insulation is impressed and/or deformed to produce a profile during curing; providing a molding device within the tunnel furnace, wherein the molding device subjects the insulation to the controlled compaction in such a manner to produce the at least one permanent impression and/or deformation and curing of the insulation material occurs while the insulation material abuts the molding device to subject the insulation material to the controlled compaction) (see fig. 1 and col. 3, lines 5-35 and 60-70).

Morrison does not appear to expressly teach shaping the pack into a non-rectangular cross-sectional profile.

Gilhart teaches making a mineral wool blanket (see title) by forming a blanket of substantially uniform depth layer (wherein the insulation material enters the tunnel furnace having a rectangular cross-sectional profile) (see col. 2, lines 64-69) and then shaping in an oven 30 to interlock the fibers in an imprinted design (the insulation material is impressed and/or deformed to produce a non-rectangular cross-sectional profile during the curing) (see col. 1, line 55 through col. 2, line 4; figs. 1 and 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to select Gilhart's shaping in an oven to an imprinted design as the compression conveyor's 32 surface configuration in Morrison's process of making a wool pack in order to provide a pad or blanket with a configuration to facilitate application to of the material to a surface (see Gilhart, col. 1, lines 11-16).

With respect to Claim 44, the product is a glass wool pack (the mineral wool is glass wool) (see col. 3, lines 5-11).

With respect to Claims 46 and 47, Gilhart teaches forming a rectilinear grid on the blanket (the cross-sectional profile comprises at least one depression or projection; the cross-sectional profile of the insulation element displays two parallel recesses in one surface) (see col. 1, lines 31-40).

With respect to Claims 48 and 73, Gilhart teaches compressing using a mesh screen (see col. 2, lines 5-19), which would necessarily differ the density according to the structure of the mesh screen (during the step of subjecting sections of the insulation material to controlled compaction, the insulation material is compacted to varying degrees, whereby a density within the insulation element varies accordingly; the mineral wool has the non-rectangular cross-sectional profile and areas of different density after being provided with the at least one permanent impression and/or deformation).

With respect to Claim 53, Morrison teaches the curing oven 30's compression conveyor 32 brings down a fibrous glass web 16 to its desired thickness from four inches to two inches (the molding device reduces a cross section of a gap through which the insulation material is transported within the tunnel furnace and compacting the insulation material as it passes therethrough) (see Morrison, fig. 1 and col. 3, lines 5-35 and 60-70).

With respect to Claims 54, 70, and 72, Gilhart teaches reliefs on the material handling means within oven 30 to interlock the fibers in an imprinted design (the molding device is integrated in the conveyor unit within the tunnel furnace, the conveyor unit comprising at least one first molding element to form the at least one permanent impression and/or deformation, during which process, as a result of contact with a

Art Unit: 1791

molding surface of the at least one first molding element, the insulation material assumes the non-rectangular cross-sectional profile; the molding element has a contoured molding surface; the contoured molding surface comprises grooves and/or projections) (see col. 1, line 55 through col. 2, line 4; figs. 1 and 2).

With respect to Claim 55, Gilhart teaches shaping a mineral wool blanket in an oven 30 by pressing the fibers into compacted condition to interlock the fibers in an imprinted design (the at least one first molding element is configured to contact the insulation material with a pressure contact) (see col. 1, line 55 through col. 2, line 4; figs. 1 and 2).

With respect to Claims 56, 57, and 61, Gilhart teaches shaping a mineral wool blanket in an oven 30 by pressing the fibers into compacted condition to interlock the fibers in an imprinted design on both surfaces (the molding device as at least one second molding element opposite the at least one first molding element; molding device comprises at least two molding elements; conveyor unit or a compacting and guiding unit, which, together with the conveyor unit, compacts the insulation material or transports it at an upper side) (see col. 1, line 55 through col. 2, line 19; figs. 1 and 2), which are a part of the system of moving the blanket (see fig. 3 and col. 3, lines 26-37), which makes the molding elements attachable principally because they are attached (the first molding element and/or the second molding element are engineered as attachable elements for the conveyor unit or a compacting and guiding unit).

With respect to Claims 62-64, 67, and 68, Morrison teaches that the slats which shape the web are perforated metal slats on a chain (the attachable elements and the

Art Unit: 1791

conveyor unit are engineered as metal components that have the form of gratings or are provided with ventilation channels; components are made of heat-resistant materials; components are segmented; the molding element of the molding device is engineered as an endless loop; the endless loop includes a plurality of successive segments) (see fig. 2 and col. 3, lines 19-35).

With respect to Claim 58, Morrison teaches that the slats 19 run side-to-side (the molding device further includes at least one lateral molding element) (see col. 3, lines 23-27 and fig. 2).

With respect to Claim 59, Morrison teaches conveyor 18 supporting the glass wool pack through a curing oven 30 where it is brought down to its desired thickness from four inches to two inches by the compression conveyor 32 during curing (the first molding element is formed by a compacting and guiding unit, which together with the conveyor unit, compacts the insulation material or transports it at an upper side) (see fig. 1 and col. 3, lines 5-35 and 60-70).

With respect to Claim 60, Morrison teaches compression conveyor 32 is constructed of connected perforated slats 19 (the compacting and guiding unit comprises a belt) (see fig. 1 and col. 3, lines 5-35 and 60-70).

With respect to Claim 69, Gilhart teaches compressing using a mesh screen (see col. 2, lines 5-19), which would necessarily differ the density according to the structure of the mesh screen (the molding element is engineered such that a differing degree of compaction is obtained over a breadth of the molding surface).

With respect to Claim 74, Gilhart teaches compressing using a mesh screen (see col. 2, lines 5-19), which would necessarily differ the height according to the structure of the mesh screen (the mineral wool varies in height over the cross-sectional profile after being provided with the at least one permanent impression and/or deformation).

Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morrison et al. (US Patent No. 2,997,096) in view of Gilhart (US Patent No. 3,045,316) as applied to claim 41 above, and further in view of Collins (US Patent No. 2,288,072).

With respect to Claim 43, Morrison et al. teach a method of curing a fibrous mass as previously described. Morrison teaches a method of making the fibrous mass of mineral material (see col. 9, line 55 through col. 10, line 5). Morrison does not appear to expressly teach that the mineral material is rock wool.

Collins teaches making bonded fibrous products of mineral wool such as glass wool or rock wool (see page 1 of text, left column, lines 1-20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Collins's rock wool with Morrison's method of making a mineral wool pack in order to provide a product of high temperature stability.

Claim 48, 66, 69, 71, and 73-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morrison et al. (US Patent No. 2,997,096) in view of Gilhart (US Patent No. 3,045,316) as applied to Claims 41, 53, 54, 56, and 70 above, and further in view of Johnston (US Patent No. 3,077,426).

With respect to Claim 48, 69, 73, and 75, Morrison in view of Gilhart teaches compressing using a mesh screen (see Gilhart, col. 2, lines 5-19), which would

Art Unit: 1791

necessarily differ the density according to the structure of the mesh screen (during the step of subjecting sections of the insulation material to controlled compaction, the insulation material is compacted to varying degrees, whereby a density within the insulation element varies accordingly; the mineral wool has the non-rectangular cross-sectional profile and areas of different density after being provided with the at least one permanent impression and/or deformation; the molding element is engineered such that a differing degree of compaction is obtained over a breadth of the molding surface; the insulation element has a higher density in thinner areas than in thicker areas after being provided with the at least one permanent impression and/or deformation).

However, if it is held that Morrison in view of Gilhart does not teach varying density, Johnston teaches making a glass fiber blanket (see col. 1, lines 9-35) by shaping to form a dense, thin, and strong border (see col. 6, lines 33-66 and fig. 8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to vary the thickness of a board by varying its density as taught by Johnston in the process of making a fiber panel as taught by Morrison in order to form a panel with strong borders without having a step of sawing or machining (see Johnston col. 6, lines 20-47).

With respect to Claims 66, 71, and 77, Morrison does not appear to expressly teach that the slats 19 include an inclined surface.

However, Johnston teaches making a glass fiber blanket (see col. 1, lines 9-35) by having a mold surface 49 gradually sloping upwards that gradually decreases the fiber blanket thickness toward the edges shaping to form a dense, thin, and strong

Art Unit: 1791

border (the first and/or second molding element is arranged such that with respect to a conveying plane of the conveyor unit, its molding surface is inclined about a longitudinal transport axis; the contoured molding surface comprises an inclined planar surface; a height of the first or second molding element decreases across a breadth of the conveyor unit) (see col. 6, lines 33-66 and fig. 8).

With respect to Claim 74, Morrison in view of Gilhart teaches compressing using a mesh screen (see Gilhart, col. 2, lines 5-19), which would necessarily differ the height according to the structure of the mesh screen (the mineral wool varies in height over the cross-sectional profile after being provided with the at least one permanent impression and/or deformation).

However, if it is held that Gilhart does not teach varying height, Johnston teaches making a glass fiber blanket (see col. 1, lines 9-35) by shaping to form a dense, thin, and strong border (see col. 6, lines 33-66 and fig. 8).

With respect to Claim 76, Gilhart teaches forming a rectilinear grid on the blanket (the cross-sectional profile of the insulation element displays, in one surface, two parallel recesses in an area of which the density is higher than in very thick areas after being provided with the at least one permanent impression and/or deformation) (see col. 1, lines 31-40).

With respect to Claim 77, Morrison teaches that the slats 19 which shape the web are perforated metal slats 19 on a chain 20 on both the conveyor 18 and the compression conveyor flight 32 (see fig. 2 and col. 3, lines 19-35). Thus, the conveyor

Art Unit: 1791

19 and compression conveyor flight 32 each individually have a single unit of a looped chain 20 of slats 19 (the first or second molding element consists of a single member)

With respect to Claim 78, Morrison teaches that the slats which shape the web are metal slats 19 on a chain 20 (see fig. 2 and col. 3, lines 19-35). These metal slats 19 on a chain 20 make up the conveyor 18, as a unit they necessarily extend the length of the conveyor 18 (the second molding element extends over an entire length of the conveyor).

Claim 65 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morrison et al. (US Patent No. 2,997,096) in view of Gilhart (US Patent No. 3,045,316) as applied to claims 41, 53, 54, 56, and 61 above, and further in view of Davies (US Patent No. 6,176,370 B1).

With respect to Claim 65, Morrison teaches a method of curing a fibrous mass as previously described. Morrison teaches slats 19 on conveyor 18 and compression conveyor 32 via roller chains 20 during curing (see figs. 1 and 2 and col. 3, lines 5-35 and 60-70).

However, Morrison does not appear to expressly teach the attachment of the slats 19 as quick release.

Davies teaches slats that are quick release (see title and abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to select Davies's quick release slats as the slats in Morrison's conveyors in order to facilitate maintenance processes (see Davies, col. 1, lines 36-60).

Response to Arguments

Applicant's arguments filed 01 February 2010 have been fully considered but they are not persuasive.

Applicant argues with respect to the Specification objection. Applicant's arguments appear to be on the grounds that:

1) Applicant's amendment to Claim 60 overcomes the objection by deleting the limitation "flight."

Applicant argues with respect to the 35 U.S.C. § 112, first paragraph, rejections. Applicant's arguments appear to be on the grounds that:

2) In addition to the sections noted by the Examiner in the rejection, Claim 2 as originally filed rejected the claimed limitations.

Applicant argues with respect to the 35 U.S.C. § 112, second paragraph, rejections. Applicant's arguments appear to be on the grounds that:

3) Applicant's amendment to Claim 57 overcomes the rejection as suggested.

Applicant argues with respect to the 35 U.S.C. § 103(a) rejections. Applicant's arguments appear to be on the grounds that:

4) The combination of references has not been given a reason that the claimed invention would be obvious since elements of claims are missing. Specifically, the molding device of Gilhart does not contact the insulation material during curing.

The Applicant's arguments are addressed as follows:

1) In view of Applicant's amendment to Claim 60 to remove the objected claim language, the Examiner withdraws the previously set forth objection to the Specification as detailed in the Specification section of the Office Action dated 01 October 2009.

2) Applicant's arguments with respect to Applicant's support in Claim 2 as originally filed have been fully considered and are persuasive. The 35 U.S.C. § 112, first paragraph, rejections have been withdrawn.

3) In view of Applicant's amendment to Claim 57 to clarify the limitation, the Examiner withdraws the previously set forth 35 U.S.C. § 112, second paragraph, rejection of Claim 57 as detailed in the Claim Rejections - 35 U.S.C. § 112 section of the Office Action dated 01 October 2009. However, additional 35 U.S.C. § 112, second paragraph, rejections are set forth above as necessitated by Applicant's Amendments.

4) Applicant's arguments with respect to the newly claimed limitation of contacting with the same molding device during shaping and curing have been considered but are moot in view of the new ground(s) of rejection.

As noted in the Examiner Interview Summary of the interview of 20 January 2010, a limitation of impression and curing being done by the same device was not previously required by the claims, and the references as specifically combined in the previous rejection in the Office Action dated 01 October 2009 did not meet such limitation. However as discussed in the interview, the summary recites "Gilhart's conveyors may not meet such limitation unless they have the same design as pattern rolls 35."

As now combined above, Gilhart's patterning is incorporated into Morrison's conveyors:

It would have been obvious to one of ordinary skill in the art at the time the invention was made to select Gilhart's shaping in an oven to an imprinted design

as the compression conveyor's 32 surface configuration in Morrison's process of making a wool pack in order to provide a pad or blanket with a configuration to facilitate application to of the material to a surface (see Gilhart, col. 1, lines 11-16).

Moreover, as recited above, Morrison's conveyor 18 supports the insulation material through a curing oven 30 where it is brought down to its desired thickness from four inches to two inches by the compression conveyor 32 and is in contact with the mass of fibers 16 during curing (see fig. 1 and col. 3, lines 5-35 and 60-70).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 1791

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick Butler whose telephone number is (571) 272-8517. The examiner can normally be reached on Mon.-Thu. 7:30 a.m.-5 p.m. and alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. B./
Examiner, Art Unit 1791

/Christina Johnson/
Supervisory Patent Examiner, Art Unit 1791